

AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

1-52. (Canceled)

53. (Currently Amended) A method for eliciting an immune response against an A/E pathogen, or component thereof, in ~~a~~ ruminant animal comprising administering to the ruminant animal an effective amount of a composition comprising:

- i) ~~an isolated polypeptide which comprises an amino acid sequence having at least 75% sequence identity substantially identical to the sequence of SEQ ID NO: 24 SEQ ID NOS: 22-24 or an immunogenic fragment or variant thereof, or~~
- ii) ~~a nucleic acid molecule which comprises a nucleotide sequence substantially identical to the sequence of SEQ ID NOS: 1-3 or a fragment or variant thereof;~~
- iii) ~~a nucleic acid molecule encoding a polypeptide which comprises an amino acid sequence substantially identical to the sequence of SEQ ID NOS: 22-24 or a fragment or variant thereof, or~~
- iv) ~~a cell culture supernatant which comprises an isolated polypeptide comprising an amino acid sequence having at least 75% sequence identity substantially identical to the sequence of SEQ ID NO: 24 SEQ ID NOS: 22-24, or an immunogenic fragment or variant thereof,~~
thereby eliciting an immune response in the ruminant animal.

54. (Currently Amended) A method for reducing colonization of an A/E pathogen in ~~an animal~~ ruminant, the method comprising administering to the ruminant animal an effective amount of a composition comprising:

- i) ~~an isolated polypeptide which comprises an amino acid sequence substantially identical having at least 75% sequence identity to SEQ ID NO: 24 the sequence of SEQ ID NOS:~~

- ~~22-24, or an immunogenic fragment or variant thereof, or~~
- ~~ii) a nucleic acid molecule which comprises a nucleotide sequence substantially identical to the sequence of SEQ ID NOS: 1-3 or a fragment or variant thereof;~~
 - ~~iii) a nucleic acid molecule encoding a polypeptide which comprises an amino acid sequence substantially identical to the sequence of SEQ ID NOS: 22-24 or a fragment or variant thereof, or~~
 - ~~iv) a cell culture supernatant which comprises an isolated polypeptide comprising an amino acid sequence having at least 75% sequence identity substantially identical to SEQ ID NO: 24 the sequence of SEQ ID NOS: 22-24, or an immunogenic fragment or variant thereof, thereby reducing colonization of the A/E pathogen in the ruminant animal.~~
55. (Currently Amended) A method for reducing shedding of an A/E pathogen in an animal ~~a ruminant~~ comprising administering to the ~~ruminant animal~~ an effective amount of a composition comprising:
- ~~i) an isolated polypeptide which comprises an amino acid sequence having at least 75% sequence identity substantially identical to SEQ ID NO: 24 the sequence of SEQ ID NOS: 22-24 or an immunogenic fragment or variant thereof,~~
 - ~~ii) a nucleic acid molecule which comprises a nucleotide sequence substantially identical to the sequence of SEQ ID NOS: 1-3 or a fragment or variant thereof;~~
 - ~~iii) a nucleic acid molecule encoding a polypeptide which comprises an amino acid sequence substantially identical to the sequence of SEQ ID NOS: 22-24 or a fragment or variant thereof, or~~
 - ~~iv) a cell culture supernatant which comprises an isolated polypeptide comprising an amino acid sequence having at least 75% sequence identity substantially identical to SEQ ID NO: 24 the sequence of SEQ ID NOS: 22-24, or an immunogenic fragment or variant thereof, thereby reducing shedding of the A/E pathogen in the ruminant animal.~~

56. (Currently Amended) The method of claim 53, wherein the animal is a ruminant is

Application Serial No. 10/577,742
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a bovine or ovine subject.

57. (Currently Amended) The method of claim 5654, wherein the ruminant is a bovine or ovine subject.

58. (Currently Amended) The method of claim 5355, wherein the ruminant is a bovine or ovine subject animal is a human.

59-70. (Canceled)

71. (Previously Presented) The method of claim 53, wherein the A/E pathogen is enterohemorrhagic *E. coli* (EHEC), enteropathogenic *E. coli* (EPEC), or *Citrobacter rodentium*.

72. (Original) The method of claim 71 wherein the EHEC is EHEC O157:H7 or EHEC O157:NM.

73. (Original) The method of claim 71 wherein the EPEC is EPEC 0127:H6.

74-85. (Canceled)

86. (Previously Presented) The method of claim 53, wherein the composition is provided in combination with a physiologically acceptable carrier.

87. (Previously Presented) The method of claim 53, wherein the polypeptide comprises 20% of the cell protein present in the composition.

88. (Currently Amended) The method of claim 53, wherein the composition further comprises a EspA, EspB, EspD, EspP, Tir, Shiga-toxin-1, Shiga-toxin-2, , or intimin polypeptide.

89. (Previously Presented) The method of claim 53, wherein the composition further comprises an adjuvant.

90. (Currently Amended) The method of claim 53 54, further comprising treating or preventing infection by the A/E pathogen wherein the A/E pathogen is enterohemorrhagic *E. coli* (EHEC), enteropathogenic *E. coli* (EPEC), or *Citrobacter rodentium*.

91. (Currently Amended) The method of claim 53 54, wherein the animal is a ruminant EHEC is EHEC O157:H7 or EHEC O157:NM.

92. (Currently Amended) The method of claim 53 54, wherein the animal is a ruminant composition further comprises an adjuvant.

93. (Currently Amended) The method of claim 54 55, wherein the animal is a human A/E pathogen is enterohemorrhagic *E. coli* (EHEC), enteropathogenic *E. coli* (EPEC), or *Citrobacter rodentium*.

94. (Currently Amended) The method of claim 55, wherein the animal is a human EHEC is EHEC O157:H7 or EHEC O157:NM.

95. (New) The method of claim 55, wherein the composition further comprises an adjuvant.